

## CLAIMS

What is claimed is:

1. A method to determine an order for a function to receive processing resources in a system that includes a plurality of functions, said method comprising:  
    identifying, in said system, a plurality of instances of said functions that use processing resources; and  
    determining, with a fuzzy inference system, an importance of at least one of said instances.
2. The method of claim 1, further comprising:  
    preventing starvation of one of said function instances by determining a recent time period that said processing resources were allocated to said instance function.
3. The method of claim 1, further comprising:  
    preventing starvation of one of said function instances by determining a recent time period where said instance function contains signal energy that would allow an execution of one of said instance.
4. The method of claim 1, further comprising:  
    fuzzification of a plurality of inputs by said fuzzy inference system.
5. The method of claim 4, wherein said fuzzification comprises associating said inputs with a plurality of membership functions.

6. The method of claim 1, further comprising:  
defining a plurality of rules for scaling an output of said fuzzy inference system.
7. The method of claim 6, further comprising:  
aggregating a plurality of said scaled outputs into a single fuzzy output variable, wherein said output determines said importance of said instance function.
8. The method of claim 1, further comprising:  
ordering, with a scheduling priority fuzzy inference system, said instances to receive said processing resources.
9. The method of claim 8, further comprising:  
determining an amount of the processing resources available for distribution to each of the function instances; and  
allocating the available processing resources to the function instances according to said ordering.
10. The method of claim 1, wherein said identifying comprises identifying a plurality of echo canceller instance functions that use said processing resources; and  
said determining comprises determining said importance of at least one of said echo canceller instance functions using said fuzzy inference system.
11. The method of claim 10, further comprising:  
fuzzification of a plurality of echo cancellation inputs by said fuzzy inference system.

12. The method of claim 10, further comprising:  
updating a local state information storage with a plurality of echo cancelling instance events;  
determining, from the local state information storage, the available processing resources for said echo canceller instance functions; and  
allocating available processing resources to the echo canceller instance functions according to the importance of said instance functions.
13. A system to determine an order a plurality of function instances to receive processing resources, comprising:  
a function ordering module, comprising a fuzzy inference system, to determine an importance of at least one of said function instances using said fuzzy inference system; and  
a resource allocator to allocate processing resources to said function instances.
14. The system of claim 14, wherein said function ordering module prevents a starvation of one of said function instances by determining a recent time period that said processing resources were allocated to said one of said instance functions.
15. The system of claim 14, wherein said function ordering module prevents a starvation of one of said function instances by determining a recent time period where said one of said instance function contains signal energy that would allow an execution of said one of said instances.
16. The system of claim 14, wherein said fuzzy inference system performs fuzzification of a plurality of inputs.

17. The system of claim 16, wherein said fuzzy inference system associates said inputs with a plurality of membership functions.

18. The system of claim 14, wherein said function ordering module defines a plurality of rules for scaling an output of said fuzzy inference system; and  
uses an aggregation process to combine said scaled outputs into a single fuzzy output variable.

17. The system of claim 18, wherein said fuzzy interface system maps a plurality of inputs to an output, wherein said output determines said importance of each instance function.

19. The system of claim 14, further comprising:  
a resource tracker for determining an amount of the processing resources available for distribution to each of the function instances; and  
a resource allocator for allocating the available processing resources to the function instances according to said importance.

22. The system of claim 14, wherein said function ordering module determines an importance of a plurality of echo canceller instance functions.

23. The system of claim 21, further comprising:  
an allocator for allocating said processing resources to the echo canceller instance functions according to said importance.